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1   LISTING OF THE CLAIMS

2   CLAIMS

3   LISTING OF THE CLAIMS

4   CLAIMS

5   1. (currently amended) A computerized method comprising: executing a nested transaction for

6   computing data in an execution environment supporting a flat transaction only, and wherein a

7   nested transaction encapsulates between a first StartTransaction operation and a corresponding

8   first EndTransaction operation on a first nesting level a hierarchy of one or more further

9   StartTransaction operations and corresponding further EndTransaction operations on further

10   nesting levels, wherein a StartTransaction operation starts a transaction; and wherein an

11   EndTransaction operation ends a transaction; wherein a facade library provides access from an

12   object oriented environment to a relational database system, having a transaction object

13   comprises a depth counter, a CommitTransaction operation, and a RollbackTransaction operation

14   as object methods, and said method further comprising performing a StartTransaction operation

15   by,

16   checking whether said StartTransaction operation is on the first testing level of said

17   nested transaction, and

18   issuing a corresponding StartTransaction operation within said execution environment

19   only if said StartTransaction operation is on the first testing level of said nested transaction in the

20   affirmative case but not otherwise.

21   2. (currently amended) A computerized method for executing a nested transaction for computing

22   data in an execution environment supporting a flat transaction only according to claim 1, said

23   method performing an EndTransaction operation by:

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1   checking, in case said EndTransaction operation is a CommitTransaction operation

2   successfully terminating a transaction, whether said EndTransaction operation is on said first

3   nesting level of said nested transaction, and

4   issuing a corresponding CommitTransaction operation within said execution environment

5   only if said EndTransaction operation is on said first nesting level of said nested transaction in

6   the affirmative case but not otherwise.

7   3. (currently amended) A computerized method for executing a nested transaction for computing

8   data in an execution environment supporting a flat transaction only according to claim 2, said

9   method performing an EndTransaction operation in case said EndTransaction operation is a

10   RollbackTransaction operation aborting a transaction as unsuccessful, by issuing a corresponding

11   RollbackTransaction operation within said execution environment independent from the nesting   :

12   level of said RollbackTransaction operation.

13   4. (currently amended) A computerized method for executing a nested transaction for computing

14   data in an execution environment supporting a flat transaction only according to claim 3, said

15   method performing, once a RollbackTransaction operation has been executed within said nested

16   transaction, any further   StartTransaction operation or any further EndTransaction operation

17   within said nested transaction independent from its nesting level by rejecting it as being in error

18   without issuing a corresponding StartTransaction operation or a corresponding EndTransaction

19   operation to the execution environment.

20   5. (currently amended) A computerized method for executing a nested transaction for computing

21   data in an execution environment supporting a flat transaction only, and wherein a nested

22   transaction encapsulates between a first StartTransaction operation and a corresponding first

23   EndTransaction operation on a first nesting level a hierarchy of one or more further

24   StartTransaction operations and corresponding further EndTransaction operations on further

25   nesting levels, wherein a StartTransaction operation starts a transaction; and wherein an

26   EndTransaction operation ends a transaction; and said method further comprising performing a

27   StartTransaction operation by,

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1   checking whether said StartTransaction operation is on the first testing level of said

2 nested transaction, and

3   issuing a corresponding StartTransaction operation within said execution environment

4 only <u>if said StartTransaction operation is on the first testing level of said nested transaction</u> ~~in the~~

5 ~~affirmative case but not otherwise~~;

6 said method performing an EndTransaction

7   operation by:

8   checking, in case said EndTransaction operation is a CommitTransaction operation

9 successfully terminating a transaction, whether said EndTransaction operation is on said first

10 nesting level of said nested transaction, and

11   issuing a corresponding CommitTransaction operation within said execution environment

12 only <u>if said EndTransaction operation is on said first nesting level of said nested transaction</u> ~~in~~

13 ~~the affirmative case but not otherwise~~;

14 said method performing an EndTransaction operation in case said EndTransaction operation is a

15 RollbackTransaction operation aborting a transaction as unsuccessful, by issuing a corresponding

16 RollbackTransaction operation within said execution environment independent from the nesting

17 level of said RollbackTransaction operation

18 said method performing, once a RollbackTransaction operation has been executed within said

19 nested transaction, any further StartTransaction operation or any further EndTransaction

20 operation within said nested transaction independent from its nesting level by rejecting it as

21 being in error without issuing a corresponding StartTransaction operation or a corresponding

22 EndTransaction operation to the execution environment; and

23 wherein said method:

24   checks the nesting level of any of said StartTransaction or EndTransaction operations by

25 a depth counter,

26   increments said depth counter in the case of processing a StartTransaction operation, and

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1   decrements said depth counter in the case of processing an EndTransaction operation
2   which is a CommitTransaction operation, and
3   sets said depth counter to zero or an invalid value in the case of processing an
4   EndTransaction operation which is a RollbackTransaction operation.

5   6. (currently amended) A computerized method for executing a nested transaction for computing
6   data in an execution environment supporting a flat transaction only according to claim, claim 5,
7   wherein:
8   said method is performed by a facade library separate from said execution environment,
9   and said execution environment is a database system, and
10   said facade library provides access from an object oriented environment to said relational
11   database system.

12   7. (currently amended) A computerized method for executing a nested transaction for computing
13   data in an execution environment supporting a flat transaction only according to claim 6, wherein
14   said facade library comprises a STORE object class providing access to said database system and
15   said STORE object class providing said StartTransaction operation as one of its methods.

16   8. (currently amended) A computerized method for executing a nested transaction for computing
17   data in an execution environment supporting a flat transaction only according to claim 7, said
18   method performing said
19   StartTransaction operation by creating a transaction object for further control of said nested
20   transaction in case said StartTransaction operation is on the first nesting level

21   9. (currently amended) A computerized method for executing a nested transaction for computing
22   data in an execution environment supporting a flat transaction only according to claim 8, wherein
23   said transaction object comprises said depth counter, said CommitTransaction operation, and said
24   RollbackTransaction operation as object methods.

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1   10. (currently amended) A computer implemented system for executing a nested transaction <u>for</u>

2   <u>computing data</u> in an execution environment supporting a flat transaction only, the nested

3   transaction being tangibly embodied in a computer to perform execution of transactions, and   :

4   wherein a nested transaction encapsulates between a first StartTransaction operation and a

5   corresponding first EndTransaction operation on a first nesting level a hierarchy of one or more

6   further StartTransaction operations and corresponding further EndTransaction operations ends a

7   transaction; said system performing a StartTransaction operation, the system comprising.

8   means for checking whether said StartTransaction operation is on the first nesting level of

9   said nested transaction, and

10   means for issuing a corresponding StartTransaction operation within said execution

11   environment only <u>if said StartTransaction operation is on the first testing level of said nested</u>

12   <u>transaction</u> ~~in the affirmative case but not otherwise~~.

13   11. (currently amended) A data processing program for execution in a data processing system

14   comprising software code portions for performing a computerized method for executing a nested

15   transaction <u>for computing data</u> in an execution environment supporting a flat transaction only,   :

16   and wherein a nested transaction encapsulates between a first StartTransaction operation and a

17   corresponding first EndTransaction operation on a first nesting level a hierarchy of one or more

18   further StartTransaction operations and corresponding further EndTransaction operations on

19   further nesting levels, wherein a StartTransaction operation starts a transaction; and wherein an

20   EndTransaction operation ends a transaction; wherein a facade library provides access from an

21   object oriented environment to a relational database system, having a transaction object

22   comprises a depth counter, a CommitTransaction operation, and a RollbackTransaction operation

23   as object methods, and said method further comprising performing a StartTransaction operation

24   by,

25   checking whether said StartTransaction operation is on the first nesting level of said

26   nested transaction, and

27   issuing a corresponding StartTransaction operation within said execution environment   :

28   only <u>if said StartTransaction operation is on the first nesting level of said nested transaction</u> ~~in~~

29   ~~the affirmative case but not otherwise~~.

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1   12. (currently amended) A computer program product stored on a computer usable medium,

2   comprising computer readable program means for causing a computer to perform a method

3   executing a nested transaction in an execution environment supporting a flat transaction only,

4   and wherein a nested transaction encapsulates between a first StartTransaction operation and a

5   corresponding first EndTransaction operation on a first nesting level a hierarchy of one or more

6   further StartTransaction operations and corresponding further EndTransaction operations on

7   further nesting levels, wherein a StartTransaction operation starts a transaction; and wherein an

8   EndTransaction operation ends a transaction; wherein a facade library provides access from an

9   object oriented environment to a relational database system, having a transaction object

10   comprises a depth counter, a CommitTransaction operation, and a RollbackTransaction operation

11   as object methods, and said method further comprising performing a StartTransaction operation

12   by,

13   checking whether said StartTransaction operation is on the first nesting level of said

14   nested transaction,

15   and issuing a corresponding StartTransaction operation within said execution

16   environment only if said StartTransaction operation is on the first testing level of said nested

17   transaction ~~in the affirmative case but not otherwise~~.

18   13. (currently amended) An article of manufacture comprising a computer usable medium having

19   computer readable program code means embodied therein for causing execution of a nested

20   transaction for computing data in an execution environment supporting a flat transaction only,

21   the computer readable program code means in said article of manufacture comprising computer

22   readable program code means for causing a computer to effect the steps of claim 1.

23   14. (previously presented) A program storage device readable by machine, tangibly embodying a

24   program of instructions executable by the machine to perform method steps for, said method

25   steps comprising the steps of claim 1.

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1   15. (currently amended) An article of manufacture comprising a computer usable medium having :

2   computer readable program code means embodied therein for causing execution of a nested

3   transaction for computing data in an execution environment supporting a flat transaction only,

4   the computer readable program code means in said article of manufacture comprising computer

5   readable program code means for causing a computer to effect the steps of claim 5.

6   16. (previously presented) A program storage device readable by machine, tangibly embodying a

7   program of instructions executable by the machine to perform method steps for, said method

8   steps comprising the steps of claim 5.

9   17. (currently amended) A computer program product comprising a computer usable medium

10   having computer readable program code means embodied therein for causing a executing a

11   nested transaction for computing data in an execution environment supporting a flat transaction

12   only, the computer readable program code means in said computer program product comprising   :

13   computer readable program code means for causing a computer to effect the functions of claim

14   10.

15   18. (New) A computerized method for executing a nested transaction in an execution

16   environment supporting a flat transaction only according to claim 1, said method performing an

17   EndTransaction operation for computing data by:

18   checking, in case said EndTransaction operation is a CommitTransaction operation

19   successfully terminating a transaction, whether said EndTransaction operation is on said first

20   nesting level of said nested transaction, and

21   issuing a corresponding CommitTransaction operation within said execution environment

22   only if said EndTransaction operation is on said first nesting level of said nested transaction;

23   said method performing an EndTransaction operation in case said EndTransaction operation is a

24   RollbackTransaction operation aborting a transaction as unsuccessful, by issuing a corresponding

25   RollbackTransaction operation within said execution environment independent from the nesting

26   level of said RollbackTransaction operation; and

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1 said method performing, once a RollbackTransaction operation has been executed within said
2 nested transaction, any further StartTransaction operation or any further EndTransaction
3 operation within said nested transaction independent from its nesting level by rejecting it as
4 being in error without issuing a corresponding StartTransaction operation or a corresponding
5 EndTransaction operation to the execution environment.

6 19. (New) An article of manufacture comprising a computer usable medium having computer
7 readable program code means embodied therein for causing execution of a nested transaction for
8 computing data in an execution environment supporting a flat transaction only, the computer
9 readable program code means in said article of manufacture comprising computer readable
10 program code means for causing a computer to effect the steps of claim 18.

11 20. (New) A computerized method for executing a nested transaction in an execution
12 environment supporting a flat transaction only according to claim 5, wherein:
13   said method is performed by a facade library separate from said execution environment,
14 and said execution environment is a database system, and
15   said facade library provides access from an object oriented environment to said relational
16 database system;
17   said facade library comprises a STORE object class providing access to said database
18 system and said STORE object class providing said StartTransaction operation as one of its
19 methods;
20   said method performing said StartTransaction operation by creating a transaction object
21 for further control of said nested transaction in case said StartTransaction operation is on the first
22 nesting level; and
23   said transaction object comprises said depth counter, said CommitTransaction operation,
24 and said RollbackTransaction operation as object methods.

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